

MEDICINE

Stop Blood Plasma Jaundice

Hope is seen that danger of jaundice from blood plasma transfusions can be averted by high intensity electron treatment of the plasma.

► HOPE OF stopping the danger of a patient getting a serious jaundice sickness with a transfusion of blood plasma appears in a report to the New York Academy of Sciences.

The sickness, known as homologous serum jaundice, is caused by a virus which gets into the blood. Reports of a number of cases of this sickness following transfusions with plasma that has been sterilized by ultraviolet rays have been causing much concern in medical circles in recent years.

High intensity electron treatment of the plasma in the frozen state may be the answer to this pressing problem. Such treatment can actually kill viruses in blood plasma, Dr. Wolfgang Huber of Electronized Chemicals Corporation, Brooklyn, N. Y., reported.

The dosages necessary, he found in his experiments, increase roughly with the decrease in the size of the virus. For the Lansing strain of poliomyelitis virus, for example, a dose of 1,500,000 rep is needed to inactivate the virus completely in blood

plasma. Rep, meaning roentgen equivalent physical, is the term used for the actual dose of electrons absorbed in tissue of a specific kind.

A dose of 1,000,000 rep, which Dr. Huber reported killed nerve-attacking viruses when put into blood plasma, is a very big dose, about 1,000 times the lethal dose for any living thing.

By proper selection of conditions during irradiation with such high doses of high intensity electrons, the damage to the plasma and its essential components can be considerably reduced or eliminated, Dr. Huber said.

The high biological efficiency of electrons, he pointed out, makes it possible to use them for sterilizing plasma at very reasonable cost levels.

Dr. Huber emphasized, however, that the results so far "show nothing more than the possibility of a promising new method for the elimination of the virus of homologous serum jaundice from plasma and other blood fractions."

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PSYCHOLOGY

Kinsey Reports Confuse

► KINSEY REPORTS on sex are likely to make nervous women more nervous and confused over sex, in the opinion of Dr. Earl O. G. Schmitt of San Jose, Calif.

"It is surprising what a large percentage of women are unhappy and worried about matters of sex," he stated in a report to the American Medical Association meeting in Los Angeles.

"I doubt very much that mass surveys such as the Kinsey reports, although possibly well intentioned, will do much constructively in leading the worrisome nervous woman out of her confused state concerning matters of sex.

"On the contrary, such reports, I fear, may have a very damaging effect on the proper understanding of sex problems and on the dignity of sex in the lives of many otherwise sane-minded women."

The present day nervous woman, he said, presents certain problems which are, in part at least, products of our machine age and speed.

She is "a scared and lonely individual in need of a friend, and looks to her doctor more often for friendship than for professional skill and service," Dr. Schmitt said.

Many such women have never learned how to get along with disappointment. Most nervous breakdowns, Dr. Schmitt said, are the result of inability to adjust to disappointment or frustration.

An interest in the domestic arts and work, sometimes part-time work such as telephone solicitation, will help many nervous women.

Dr. Schmitt gave as his firm conviction that "more nervous women are created over the bridge table than over the wash tub."

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PHYSICS

Subatomic V-Particles Are Detected Daily

► TWO PHOTOGRAPHS daily are being obtained atop Mt. Wilson, Calif., of the most elusive subatomic particles, named V from the shape of their tracks.

Dr. C. D. Anderson, California Institute of Technology Nobel laureate in physics, reported to the American Physical Society meeting in Houston, Tex., that experiments with his cloud chambers bombarded by cosmic rays are producing repeated evidence of V-

particles of which only 36 cases were observed prior to this year.

V-particles are produced when a proton or neutron traveling at very high speed strikes the nucleus of an atom. So far cosmic ray particles alone have sufficient speed to produce them. V-particles occur both as neutral particles and charged. They live for only about one ten billionth of a second and then spontaneously decay. Two types of decay of the neutral V-particles have been observed, one resulting in what is called a pi meson and a proton or hydrogen atomic nucleus, the second resulting in two pi mesons.

The California Institute of Technology work is being done under the direction of Profs. R. B. Leighton and E. W. Cowan as well as Dr. Anderson. These three physicists, together with Drs. A. J. Seriff and C. Hsiao, found 34 V-particles in cosmic ray experiments in 1950 on White Mountain, Calif., at 10,500 feet elevation. They then confirmed the discovery of the V-particles by Drs. G. D. Rochester and C. C. Butler of Manchester University, England, who in 1947 observed two examples.

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RADIO

Radar Screens Could Block Out Still Targets

► RADAR SCREENS which pick up only fast moving planes and cut out both the fixed targets in the surrounding countryside and the strips of tinfoil dropped to confuse are now possible.

Such radar, which would make identification of enemy aircraft approaching our shores much easier, depends on the Doppler effect. This is best illustrated by the change in pitch heard from a moving train whistle. Similarly, the frequency of the echo of the radio waves from a moving target will change, while those from fixed targets or relatively slow moving strips of tinfoil do not change.

Research was begun on methods to accomplish this during World War II, with the Germans being early explorers in the field. Crude models have already been constructed.

Taking advantage of the Doppler effect, according to Lt. Col. L. M. Orman writing in the *ANTI-AIRCRAFT JOURNAL* (Nov.-Dec.), requires changing the electronic signals bounced back from the targets into sound signals. These sound signals are then put through a circuit which adds an interval of delay to them.

Lt. Col. Orman, together with Capt. L. G. Callahan, Jr., found that barium titanate was the best material for such a delay line.

Once the "clutter" from fixed targets and enemy attempts at jamming are out of the way, Col. Orman says, scientists and engineers can start work on designing a radar scope which picks up only enemy planes.

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